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Comments of Hatfield & Dawson Consulting Engineers, LLC
RM No. 11779
In the Matter of
Amendment of Part 73 to permit Permanent Licensing
of AM Synchronous Booster Stations
December 2016

Hatfield & Dawson Consulting Engineers, LLC ("H&D") respectfully submits its comments in response to the Public Notice requesting comments regarding Rule Making Number 11779, which is a request to allow for permanent licensing of AM Synchronous Booster Stations.

We support this effort and believe that it will benefit both the public and the licensees of AM stations which choose to implement synchronous boosters as they continue to serve the public interest of their communities. We have experienced the benefit that these experimental facilities provide their listeners and have great expectation of the improvements that modern transmission equipment can bring to these broadcasters. The current generation of transmitters have far superior performance compared to their predecessors in power control, precision frequency control, and the ability to synchronize the audio between facilities. We believe that these improvements will provide high quality service.

We recommend that the operators of these facilities should be allowed the freedom to construct them within the existing framework of the AM allocation rules – that is using the existing allocation rules for analysis of station-to-station interference. The licensees of these facilities should be able to experiment and determine the level of audio synchronization and carrier tolerances (within the existing rules) that are need to achieve their coverage goals. While some best practices could be recommended, we believe that "enlightened self-interest" will drive the broadcasters that would make this type of investment to provide a quality product. Hamstringing these facilities with rules that may limit future innovations may be counterproductive. A broadcaster might discover with future receiver topologies that a particular system might perform better with an offset of the frequency of the carrier of 6 Hz and that synchronizing to 0.1 Hz is more troublesome. If the proposed rules would protect

other users of the service, then perhaps there is some benefit. However, if the rules are to protect the broadcaster from themselves they very likely will limit further modernizations.

Of the proposed items in the petition we submit the following:

We concur that the 2 mV/m contour is a reasonable bound for booster operations within existing coverage areas. For synchronous boosters that expand the area of coverage outside of existing licensed coverage area of the primary station, they should be able to show overlap between the 2 mV/m contours of the primary station and the booster provided this meets all of the existing allocations rules – that is that they do not result in increased prohibited overlap. For nighttime, these proposed synchronous facilities should be treated as an additional contributor to the RSS calculation and should be limited to the restrictions of the existing rules.

We see no benefit in limiting the number of these facilities that any one station can have, nor do we see any benefit in limiting the type of antenna system employed for synchronous booster facilities. That is, a directional antenna system for the synchronous operation should have the same requirements as the directional systems for main facilities, except that there should be no minimum RMS radiation requirement. We do see benefit in allowing the maximum flexibility to solve the coverage problems unique to each AM facility. The problems would include local noise, ground conductivity, population density, population distribution, geographic constraints, and local business concerns. The ability to increase the signal density in densely populated areas is vital to keeping AM facilities a viable service.

The use of these facilities in Puerto Rico and Hawaii (as well as occasionally at various locations over the past several decades in the continental U.S.) has shown that they can operate successfully. Historically the Puerto Rico and Hawaii authorized boosters are examples of facilities that have not been a problem to any other stations and have quite sufficiently provided full island coverage for these stations. These islands have very low ground conductivity in the center of the island and the population is concentrated in the coastal areas, making the booster operations a very efficient spectrum use and providing needed service.

Respectfully submitted,
Stephen S. Lockwood
President
27 December 2016

